

# **STAT-515 Mid-Term Redesign Project**

## **Rent Price Trends in the US: Redesigning Visualization**

### **GROUP 12**

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## Introduction

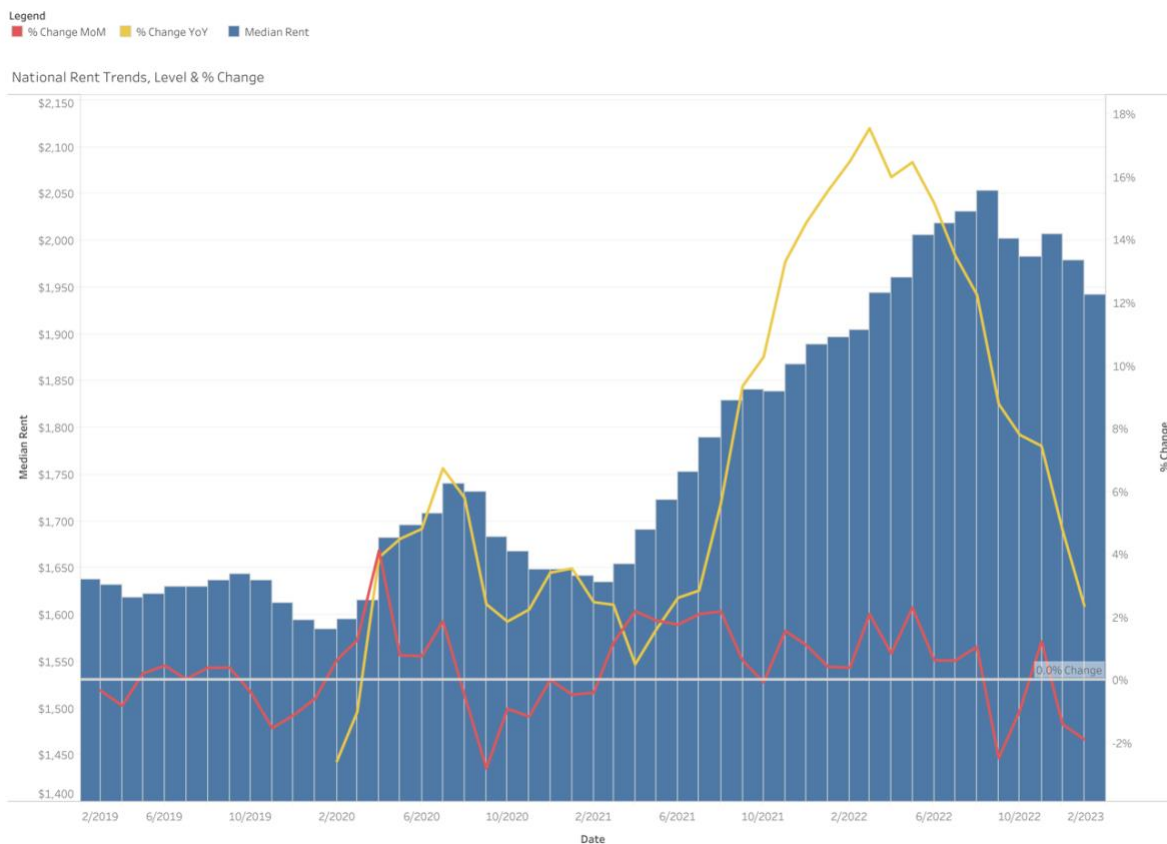
Rental prices in the United States have been a topic of discussion for years, with many factors influencing changes in rent costs across the country. In this report, we will examine the monthly trends in rent prices across the United States and explore the factors that may be contributing to these trends.

## Rent Price Trends

According to recent data from Zillow, the national median rent in the United States is currently \$1,695 per month. Over the past year, the median rent has increased by 5.5%, indicating a steady rise in rental costs. However, there is considerable variation in rental prices across different cities and states. For example, San Francisco has the highest median rent in the country, at \$3,055 per month, while Cleveland, Ohio has the lowest, at \$876 per month. In some areas, such as Seattle and Denver, rents have increased significantly over the past year, while in others, such as New York City and San Jose, rents have remained relatively stable.

## Bad Graph

The below graph is our bad graph to redesign.



## Weakness of the Bad Graph:

1. All the data is lumped together in a single location, which makes it difficult to discern any meaningful patterns or trends. A clear and well-organized graph can help to mitigate this issue and make the data more accessible and understandable.
2. It can be very difficult for people who are not familiar with data visualizations to understand what the graph is trying to convey. A well-designed graph can help to make data more accessible and understandable for a broader range of people, which can help to facilitate better decision-making and drive positive outcomes.

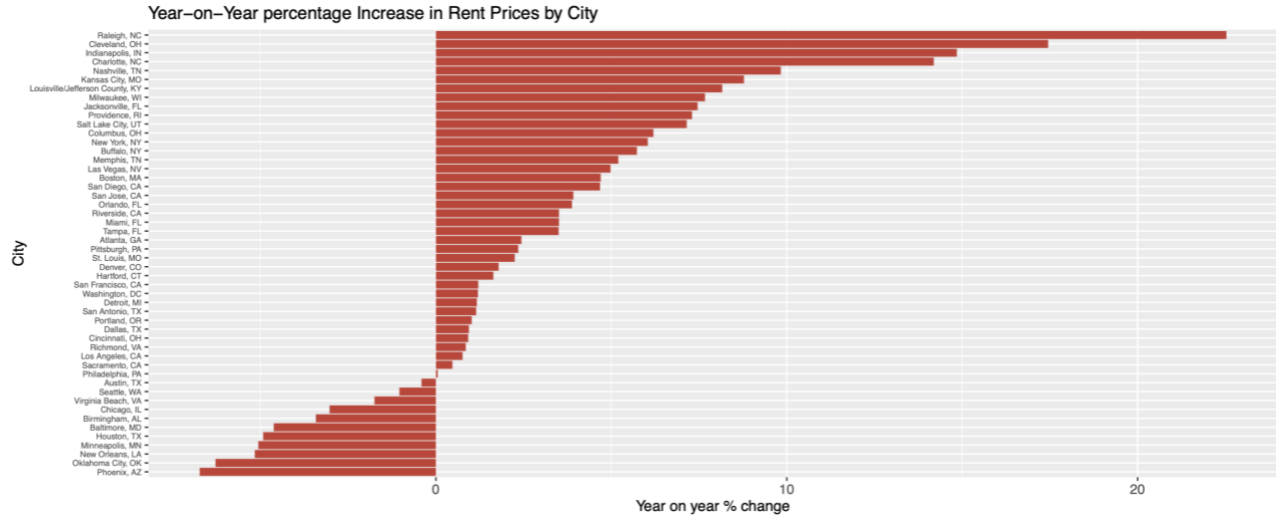
## Redesigned Good Graph

### 1. Representation of Average Rent prices by City



We have utilized a scatterplot created with ggplot to display the relationship between Median Rent and Cities. The X-axis represents the Median Rent, while the Y-axis lists all the cities. The graph is arranged in a descending order based on median rents, with the highest at the top. This arrangement aids in comparing and comprehending the median rents of various cities in the United States. It provides valuable insight into the housing market in different cities, enabling individuals to make informed relocation decisions and aiding those who plan to move to the United States in gaining a better understanding of housing rents in various cities.

## 2. Representation of Year on Year% change in average rent price



We have utilized bar graphs created with ggplot to visualize the Year on year (YOY%) change vs Cities data. The X-axis represents the Year on year % change of median rent prices, while the Y-axis lists all the cities in the dataset. Negative % values are also present in the YOY% data. This data is useful for identifying cities with increasing median rent prices year after year and comparing them to cities with decreasing % values.

## 3. Representation of Month on Month% change in average rent price



We utilized bar graphs created with ggplot to display the Month on Month (MOM%) change vs Cities data. The X-axis represents the Month on Month % change in the Median Rent, while the Y-axis shows all the cities in the dataset. The data displays an equal distribution of positive % and negative % values, indicating that there have been several changes in different cities in recent months. This information aids in comprehending the current market in various cities and making informed decisions.

## Conclusion

In summary, rental prices across the United States have been steadily increasing over the past year, although there is considerable variation in prices across different cities and states. Factors such as the supply of rental units and the strength of the local economy may be contributing to these trends. When analyzing rent price trends or any other data, it is important to use graphs that effectively and clearly convey the information being presented.

From the above graphs, it is evident that redesigning it helps making good decisions, look better, understanding, user friendly and provides more insights. From this visualization, tenants who wants to move to the other place they can easily understand the context of the rent prices of that place.

## References

- [1] *Rent Report February 2023. A monthly look at rent price trends across the United States.*  
Retrieved March 4th, 2023, from <https://www.rent.com/research/average-rent-price-report>